

INVASIVE SPECIES

Invasive species are plants, animals and other organisms living outside their native habitats. Once entering a new environment, they become established and spread quickly because they don't have any natural enemies.¹

Invasive species can cause serious damage to agriculture, our environment, economy and public health.

How do they get here?

A **pathway**, either natural or human-made, describes how an invasive species travels from its natural habitat to a new one. Natural pathways like wind and water currents account for very few of the new species introductions. The majority of invasive species pathways are from human activity.² Examples include:



Shipping – Ocean-going cargo freighters use **ballast water** to balance the ship's weight as they cross rough waters. Water drawn into the hull at the ship's origin is pumped out once it reaches its destination. Organisms sucked up in the water are transported from country to country like stowaways.



Cargo transport – Cargo containers arriving in Canada from around the world sometimes contain living plants, animals and insects that could escape and thrive.



Horticulture plantings – Many varieties of garden plants and herbs have been imported to Canada and escaped from gardens to become serious problems.³



Human release – Individuals have introduced invasive species to environments. Examples include releasing live bait and non-native species into waterways.⁴



Baby's breath is commonly used in bouquets.

DYK? Baby's breath was imported by settlers to Canada and placed on graves. A single plant produces more than 10,000 seeds, allowing it to spread quickly.

In 2017, the estimated economic impact of invasive plants on Canadian agriculture was \$2.2 billion.¹²



Cargo ship





THE IMPACT

Invasive species reduce the variety of plants and animals (**biodiversity**) in an ecosystem by displacing native species and outcompeting them for water, nutrients and space. They can radically alter habitat, introduce diseases and breed with native species to produce hybrids that reduce the original population.⁵

Controlling invasive species can be expensive and eradication may be nearly impossible.⁸ There is federal, provincial and regional legislation that identifies prohibited invasive species and outline rules to control and prevent spread.

In agriculture, invasive species (like weeds) can severely reduce crop production (**yields**). They may increase the need for control measures like pesticides, **tillage** (turning over the soil), and mowing or flaming with natural gas or liquid propane. These weeds may also pose a risk to the health or well-being of livestock, agricultural workers and the environment.

Invasive species introduced to lakes, rivers and oceans can result in damage to fisheries and **aquaculture** (fish farming). The number of non-native species in the Great Lakes now exceeds 180, mostly due to water discharge from ships.^{6,7}

Sea lampreys are fish native to the Atlantic Ocean. In the Great Lakes these pests can devastate native species.



Examples of **invasive species**



Wild boar from Europe were introduced in the late 1980s to diversify Canadian livestock production.¹⁵ Wild pigs feed on all types of crops, as well as some insects, birds, reptiles and small mammals, decimating the environment they invade. Their range extends from British Columbia to Ontario, and has increased on average by 88,000 square kilometres per year over the last decade.¹⁶

Scentless chamomile was introduced from Europe in the 1800s as a garden plant and accidentally in crop seed.¹³ Spring wheat contaminated with scentless chamomile can have up to an 80% reduction in yield.¹⁴



The **European gypsy moth** is found in Ontario, Quebec and the Maritimes. It was introduced from the US in 1869 when a French naturalist attempted to cross the gypsy moth with North American silkworms, hoping to create a silk industry on this continent.¹⁷ Larvae of the moth cause widespread damage to leaves of trees like apple and sugar maple.¹⁸



Zebra mussels, native to Europe, came to the Great Lakes in the 1980s on ships. The mussels filter water allowing sunlight to penetrate, causing toxic algae blooms that destroy water quality and threaten the survival of native fish eggs. Their filtration systems also remove plankton, a major food source for fish and other wildlife, from the native ecosystem.¹⁹



Government agencies like the **Canadian Food Inspection Agency**⁹, **Canada Border Services Agency**¹⁰ and **Fisheries and Oceans Canada**¹¹ have regulations to prevent the introduction and spread of invasive species.